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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,577	02/11/2002	David W. Brown	P214062	6584

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EXAMINER

VON BUHR, MARIA N

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,577

Applicant(s)

BROWN ET AL.

Examiner

Maria N. Von Buhr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2004 and 19 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09072004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Examiner acknowledges receipt of Applicant's response to the previous Office action, received 19 October 2004; which cancels claim 5 and amends claims 1, 4, 6-8 and 11. Claims 1-4 and 6-11 remain pending in this application.

2. Examiner acknowledges receipt of Applicant's information disclosure statement, received 07 September 2004, with accompanying reference copies, which have been taken into consideration for this Office action.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Examiner notes that Applicant has not addressed the 35 U.S.C. §102(b) rejection of the claims, as being clearly anticipated by "A Motion Control System with Event-driven Motion-module Switching Mechanism for Robotic Manipulators," by Katayama et al. (cited by Applicant).

a. As presented in the previous Office action, Katayama et al. disclose "an event-driven motion-module switching mechanism. This mechanism can modify a reference input in real-time and can, for each event, select a previously prepared motion-module according to sensor information. This motion-compensating mechanism is effective in robot tasks with uncertainties. This highly modular and extendable control system may be useful for various robot tasks such as machining and assembling" (the abstract). "A conventional robot controller generally consists of a high-level planner and a servo controller. The high-level planner running off-line, interprets and executes the programmed instructions and generates the reference. The servo controller running in real-time controls the actuator and makes the robot follow the reference signal from the high-level planner. On the other hand, in the MSM, the function generating the reaction needs real-time processing, and as shown in Figure 1, a real-time reference modifier (RRM) is inserted between the high-level planner and the servo controller. The reaction is generated as a result of the RRM using sensor information to modify the ideal reference signal from the high-level planner" (see, at least, page 321).

b. Since Applicant has provided no arguments concerning this rejection, claims 1-4 and 6-11 stand rejected, under 35 U.S.C. §102(b), as being clearly anticipated by "A Motion Control System with Event-driven Motion-module Switching Mechanism for Robotic Manipulators," by Katayama et al.

5. In response to Applicant's amendment and remarks, concerning the 35 U.S.C. §102(e) rejection of the claims, as being clearly anticipated by Mason et al. (U.S. Patent No. 6,678,713), Examiner notes the following:

a. As presented in the previous Office action, Mason et al. disclose "use of real time machine control software integrating both event based mode and task based components. In particular, a collection of constructs have been created that allow machine control applications to be expressed in event based terms and the event based constructs to be seamlessly integrated with task based constructs" (the abstract), wherein "the Machine Control Runtime provides the Event and ReactiveTask constructs to enable applications to realize state machines directly in code. The Machine Control Runtime defines a number of Event objects that provide notification of various external occurrences that are of interest to applications. Applications may also create Event objects to provide internal notification of situation and state information to other applications. Anyone who wishes to obtain notification of an Event can attach themselves to the Event object (get themselves put on the notification list for the Event). When the Event occurs, the applications get a callback from the system, letting them know that the Event has occurred. State machines are implemented by the ReactiveTask construct. A ReactiveTask is an object that responds to Event occurrences. When created, the ReactiveTask is attached to the set of Events that it is interested in. When any of these Events occur, the system performs a callback to the HandleMessage() method of the ReactiveTask, with a parameter to indicate the Event whose occurrence triggered the ReactiveTask execution" (col. 7, lines 30-51). Since this disclosure is in relation to control of machining, the applications that provide responses to events (i.e.; the ReactiveTask) are inherently "motion control commands," as instantly claimed.

b. Applicant argues that, in view of the instant amendment, "nothing in Mason discloses, teaches, or suggests the use of a motion control component as claimed. To the contrary, Mason appears to disclose a system that is entirely device specific. In particular, the Applicant respectfully submits that one of ordinary skill in the art would read Mason to presume knowledge of the nature of the target device at the time Event objects are defined. In particular, the C++ class definitions described at the bottom of column 4 and top of column 5 of Mason indicate that the 'supply' and 'demand' sides of events should be separated. However, this separation does not suggest the translation mode of the motion control component as claimed. To the contrary, one of ordinary skill in the art would read Mason as reading that custom code be provided on the 'demand' side as defined by a particular target device ... Mason does not disclose, teach, or suggest a system that provides the benefits of hardware independence provided by the

claimed invention ... nor does Mason suggest that the teachings thereof be modified to be hardware independent" (page 2 of the instant response). This argument is persuasive.

However, Examiner notes that Applicant admits, at page 7 of the instant specification, that "the motion control component 150" of the instant invention "may be or incorporate parts of a software system as disclosed, for example, in U.S. Patent Nos. 5,691,897 and 5,867,385. The systems disclosed in the '897 and '385 patents are capable of generating device-specific control commands based on hardware independent media commands written to a predetermined application programming interface." In view of this prior art admission, Examiner deems that it would have been obvious, to one having ordinary skill in the art, at the time the instant invention was made, to modify the system of Mason et al. to allow for such use and translation of hardware independent commands, because both Brown et al. patents (U.S. Patent No. 5,691,897 or U.S. Patent No. 5,867,385) teach "methods and apparatus for designing and deploying motion control devices in which these methods and apparatus exhibit a favorable mix of the following characteristics: (a) allow the creation of high-level motion control programs that are hardware independent, but offer programmability of base motion operations; (b) hide the complexities of programming for multiple hardware configurations from the high-level programmer; (c) can easily be extended to support additional hardware configurations; and (c) transparently supports industry standard high-level programming environments" (col. 3 of both patents).

c. Accordingly, claims 1-4 and 6-11 now stand rejected under 35 U.S.C. §103(a), as being unpatentable over Mason et al. (U.S. Patent No. 6,678,713), in view of either Brown et al. patent (U.S. Patent No. 5,691,897 or U.S. Patent No. 5,867,385; both previously cited by Applicant).

6. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. §103(a), Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR §1.56 to point out the inventor and invention dates of each claim

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that was not commonly owned at the time a later invention was made in order for Examiner to consider the applicability of 35 U.S.C. §103(c) and potential 35 U.S.C. §102(e), (f) or (g) prior art under 35 U.S.C. §103(a).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR §1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR §1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria N. Von Buhr whose telephone number is 571-272-3755. The examiner can normally be reached on M-F (9am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maria N. Von Buhr
Primary Patent Examiner
Art Unit 2125

MNVB
1/07/05